INDICATORS FOR THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

Information Document prepared for SBSTTA24 by UNEP-WCMC in collaboration with the Biodiversity Indicators Partnership

Note by the Executive Secretary

1. INTRODUCTION

This document provides information on available indicators for the draft goals and targets of the post-2020 global biodiversity framework in line with the language in document CBD/SBSTTA/24/3/Add.1. It also includes analysis of available indicators and provides observations to assist the further development of the monitoring framework. The document builds on two information documents previously provided to the 23rd meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, CBD/SBSTTA23/INF/3 and CBD/SBSTTA23/INF/4, and has been prepared in response to recommendation 23/1 of that meeting (paragraph 13)[1] and recommendation 2/1 of the second meeting of the Open-ended Working Group on the post-2020 global biodiversity framework (paragraph 3)[2].

This document includes an analysis of the availability of indicators that can be used to measure the progress in implementation of post-2020 global biodiversity framework, noting:

   a. Where indicators already exist, or where new indicators are under development to measure progress and will be published in 2020 or 2021;
   b. Where published indicator methodologies are available;
   c. Whether indicators are available for use at the national level as well as global scale, and where data used to create global indicators can be accurately aggregated from national data or disaggregated to the national scale;
   d. Whether the same indicators are used to measure progress on implementation of other Conventions and processes, such as the Sustainable Development Goals (SDGs).

The document also provides an analysis of indicators used to track progress in a sample of Sixth National Reports to the Convention, and highlights work underway to develop systems to track progress at the global and national scale towards the post-2020 global biodiversity framework, once adopted.

The information presented in this document is derived mainly from data provided by members of the Biodiversity Indicators Partnership (BIP), which is summarised in the Annex (Tables 1 and 2). The BIP is a global initiative of over 60 organizations working internationally to promote and coordinate the development and delivery of biodiversity indicators for use by the Convention on Biological Diversity (CBD) and other biodiversity-related conventions, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the Sustainable Development Goals (SDGs) and national and regional

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[1] *Requests* the Executive Secretary to submit for peer review by Parties and stakeholders the document on "Indicators for global and national biodiversity targets: experience and indicator resources for development of the post-2020 global biodiversity framework", and, in collaboration with other members of the Biodiversity Indicators Partnership, to prepare an analysis of the use of indicators in the sixth national reports, and, drawing upon this information as well as the inputs to the peer review and other relevant information, including CBD/SBSTTA/23/INF/3, to prepare a document that identifies the range of relevant existing indicators, baselines, baseline dates, or other appropriate methods for monitoring changes in biodiversity, indicator gaps, and, where relevant, options for filling such gaps and for a monitoring framework for the post-2020 global biodiversity framework, taking into account the outcomes of the second meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework, and to issue the document no later than six weeks in advance of the twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice for its consideration

[2] *Invites* the Subsidiary Body on Scientific, Technical and Technological Advice at its twenty-fourth meeting to carry out a scientific and technical review of the updated goals and targets, and related indicators and baselines, of the draft global biodiversity framework, as well as the revised appendices to the framework, and to provide advice to the Working Group at its third meeting

agencies. Its secretariat is hosted by UNEP-WCMC. For more information about the BIP see www.bipindicators.net.

The document reflects work-in-progress and will be further updated as the draft post-2020 global biodiversity framework evolves. In particular, additional efforts are required to determine and analyse indicators related to those areas of the monitoring framework not covered by data available from members of the BIP.

2. FACTORS TO CONSIDER IN SELECTION AND USE OF INDICATORS IN THE MONITORING FRAMEWORK

This section highlights the attributes of indicators that Parties and stakeholders may wish to consider when deliberating upon and developing indicators to support the draft monitoring framework for the post-2020 global biodiversity framework.

2.1 The measurability of proposed goals and targets of the post-2020 framework

The CBD Parties requested the post-2020 global biodiversity framework to include SMART goals and targets. Measurable targets provide clarity on their concepts and intentions, and enhance the potential availability of indicators and supporting datasets to track progress towards them. The draft elements of the monitoring framework for the post-2020 global biodiversity framework (based on updated goals and targets as was requested by the second meeting of the OEWG and presented in document CBD/SBSTTA/24/3/Add.1) include "target components" and "monitoring elements" to aid the definition and selection of indicators to measure progress. These goals/target components and monitoring elements may also assist their adoption, or otherwise definition of more specific targets and indicators, at the national scale.

Some target components and monitoring elements are difficult to measure due to the current availability of indicators and data. Whilst there may therefore initially be gaps in indicators for new and important subjects in the framework, with investment it may be possible to develop suitable indicators and data over time. Clarity in the concepts and scope of the proposed goals and targets as the post-2020 framework develops will greatly assist work to develop indicators for any remaining gaps in the monitoring framework. Additionally, indicators are not the only means for measuring progress and informing policy making. Information on the subjects covered by proposed targets can be obtained from modelling, scientific and participatory assessments, and expert knowledge, including with indigenous peoples and local communities (IPLCs).

2.2 Criteria for indicator selection and development

The following suggestions for criteria to guide the selection of indicators for the monitoring framework have been developed drawing on the experience of the BIP in supporting global and national indicator development during the last two strategic plans for the CBD. The criteria marked with an asterisk(*) have been included in the information in the Annex (Tables 1 and 2) on available indicators for the draft monitoring framework. Few indicators will be able to meet all these criteria, and future analysis of potential indicators might include an assessment of the degree to which each indicator meets the chosen criteria.

- Alignment with the goal or target, with a clear understanding of how change in the indicator indicates change in the issue of concern.
- Availability and suitability for use at global and national scales.*
- Scientific robustness – the methodology for the indicator and the underlying data is published in a peer reviewed location that can be accessed, and the methodology can be repeated by other scientists or agencies and the same overall result obtained.
- Data availability anticipated for the time period post-2020, and preferably historical data to provide context through longer-term trends.*
- Geographic coverage of data for all regions of the world.
- Indicator already in use at global or national level (e.g. GBO, IPBES, SDGs)*
- Easily understandable: a) conceptually, how the indicator relates to the goal or target, b) in its presentation, and c) in the interpretation of the data.
- "Championed" by an institution responsible for the indicator's continued availability and communication.*
- Balanced representation of both target outcome and process/effort-related related indicators

2.3 Indicators that are used to measure progress towards other Multilateral Environmental Agreements (MEAs) and processes

In the same way that the post-2020 global biodiversity framework is intended to be a universal framework, the indicators in the framework may be shared with other processes, including other biodiversity-related conventions, the other Rio Conventions and other relevant international conventions, agreements and processes, including the 2030 Agenda for Sustainable Development. There are obvious benefits in consistent messaging, reducing costs and reporting burdens by using or adapting established indicators. In 2018, UNEP-WCMC produced a mapping of 100 global biodiversity indicators[3] that have the highest potential to enhance coherence and synergies in the development and use of indicators across multiple intergovernmental processes, including the SDGs, IPBES, UNCCD and various biodiversity-related conventions. The mapping demonstrates where there is consistency in the current use of biodiversity-related indicators in global indicators frameworks and where it might be possible to reduce the reporting burden, as well as ensure streamlined, synergistic efforts.

However, the suitability of existing indicators for the proposed goals and targets in the framework should be examined on a case-by-case basis, using the above criteria. In most cases, the alignment and synergies of indicators between processes is most easily promoted at the level of alignment of targets.

2.4 Capacity and systems to produce indicators

For an indicator to measure progress towards the adopted goals and targets, it will require regular updating during the timeframe of the post-2020 global biodiversity framework.

The production of an indicator requires a monitoring system to produce primary data, such as field observations of biodiversity or remote sensing, the compilation and analysis of the data, and the communication of the results in suitable forms for users. All these actions are required regularly to produce a robust time-series of data and derived indicators and need to be appropriately resourced. However, the demand for indicators is often not matched by adequate resources for long-term production of underlying data and the indicators themselves. This may be a barrier to effective monitoring of progress towards the adopted goals and targets. It is therefore important to consider and plan for not only available and feasible

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[3]http://wcmc.io/global_indicator_synergies

indicator methodologies for the new goals and targets but also the quantity, quality and accessibility of the data and other resources required to deliver those indicators.

A key beneficial attribute of a relevant indicator whether at the national, regional or global scale is that it has a responsible champion agency, to develop, calculate and report the indicator. Such indicator providers or custodians can be of many types; for example, existing global indicators are delivered by UN agencies, non-governmental organisations, intergovernmental organisations, national government agencies, universities, and collaborations across these groups. This principle has been adopted for the SDG indicator framework where each indicator has a custodian agency who is committed to its future production. Such agencies then usually depend on often very large networks of data providers at national and regional scales.

2.5 Status of indicators in the monitoring framework

Information document CBD/SBSTTA/23/INF/4 included considerations on the status of indicators in the post-2020 global biodiversity framework in relation to the model of the Sustainable Development Goals (SDGs), which uses a specified set of indicators for reporting progress against targets. The same document also set out considerations about the use of an indicative list of indicators, as currently applied to the current Strategic Plan for Biodiversity 2011-2020. This list of indicators was developed from proposals by ad-hoc technical and expert groups and was welcomed at the 13th meeting of the Conference of the Parties as an indicative list of indicators to measure progress through decision XIII/28. However, there has been limited uptake in their use by Parties at the national level (see Section 3). For the three global assessments of progress towards the Aichi Biodiversity Targets, indicator results have been compiled with the assistance of the BIP[4].

The notion of a small list of "headline" indicators against which all Parties would be asked to report has been raised and discussed at various occasions during the development of the current strategic plan and the post-2020 global biodiversity framework. The use of such headline indicators would enhance global assessment and comparability and could be complemented by additional global or national indicators to be used by Parties according to their national circumstances. This idea was further explored by the Organisation for Economic Co-operation and Development (OECD) in information document CBD/SBSTTA23/INF/3.

If headline indicators were to be adopted, the criteria for qualification as a headline indicator would need to include that the data (i.e. the metric) used for the indicator are consistently available across countries to enable aggregation at a global scale. An internationally agreed set of headline indicators could help prioritise national efforts and those of international organisations to further develop indicators whereby the data are consistently available across countries. Agreement on a set of headline indicators that are quantitative, consistent and comparable across countries could help achieve greater transparency and measurability between global and national targets. This could also allow a cumulative assessment of the responses taken across countries and their impacts on outcomes to identify whether national commitments and implementation are on track to meet the post-2020 global biodiversity targets[5]. Most importantly, it would also enable the identification of priority capacity and resource needs to support implementation of the post-2020 global biodiversity framework.

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[4] Global Biodiversity Outlook 3, Global Biodiversity Outlook 4; Global Biodiversity Outlook 5 (in prep)
[5] CBD/SBSTTA/23/INF/3

2.6 Gender considerations

Submissions from Parties and relevant stakeholders on the scope and content of the post-2020 framework have frequently stated the importance of effectively addressing gender considerations in the post-2020 framework[6] and this important consideration is reflected in Decision 14/34 which states that efforts should be made to advance the collection, analysis and use of gender-sensitive data, including data disaggregated by sex.[7] UN Women have identified a set of eleven indicators from the SDG framework that could be used to monitor progress towards key elements of a proposed gender-specific target[8]. As suggested by UN Women and other stakeholders, a practical way to mainstream gender across the framework would be to disaggregate relevant indicators across the monitoring framework by sex.[9]

2.7 Roles and linkages between global and national indicators

The post-2020 global biodiversity framework will be implemented primarily at the national level. It is therefore important that the relative roles and suitability of both global and national indicators are considered.

The primary role of global indicators will be to review progress at the global level. Various global indicators will be aggregated from national level data, and/or can otherwise be disaggregated to measure progress at the national level[10]. Each indicator needs to be conceptually valid and technically feasible for a global scale measurement. Some indicators will be direct measurements of the target subject, such as forest extent, protected areas coverage or the use of positive incentives. Other indicators are indices derived from a combination of measurements or assessments. Others might represent action that has been taken, such as number of Parties that have developed national gender action plans.

Some global scale indicators are derived from national datasets or national contributions, and the same data can readily be used to provide indicators at national or regional scale. An example of this would be protected area coverage, where a large network of national focal points provides both spatial and associated attribute data on national protected and conserved areas in a standardised format to UNEP-WCMC, for inclusion and dissemination through Protected Planet[11] and the 'World Database on Protected Areas'.

Some global indicators are produced from data obtained by remote sensing and/or curated global scale datasets on biodiversity features, such as forest or coral reef condition. These subjects and datasets are often transboundary in nature but can be disaggregated for national use. Data prepared in a globally consistent manner and disaggregated for national use can lower the barriers to reporting for countries. However, there are sometimes challenges when global data is downscaled for national use due to lack of resolution or applicability at national level. Political acceptability for use, and classifications/definitions (e.g. of forests) may also vary between countries.

The same principles and issues for measurable global targets and available indicators will apply to national targets and indicators. These include having target wording that is measurable, and responsible agencies and systems to produce indicators and obtain data. In the selection of national indicators, Parties will naturally give primary importance to measuring progress towards national targets, to enable changes in

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[6] CBD/WG2020/1/INF/1
[7] CBD/COP/DEC/14/18
[8] CBD/SBSTTA/23/INF/17
[9] UN Women submission (Notification 2019-075), CBD/WG2020/1/INF/1
[10] For example: https://www.ibat-alliance.org/country_profiles, CBD/SBSTTA/23/INF/3
[11] https://www.protectedplanet.net/

strategy and implementation as necessary. If the design of global targets and indicators in the framework can systematically consider how they could be implemented at the national level, this will greatly facilitate their adoption and progress reporting at all scales.

Regional scale analyses of goals and targets, across a group of neighbouring countries or a continent, are also useful and sometimes required. Regional indicators help to provide context for national targets, strategies and reporting, including for transboundary issues such as migratory species. Similarly, many countries have subnational systems of government and biodiversity policy making and action, and so indicators and data are needed at a sub-national scale. Identification of indicators that work flexibly at multiple scales is therefore highly desirable.

3. LESSONS LEARNED FROM THE USE OF INDICATORS IN SIXTH NATIONAL REPORTS

While the use of indicators in National Reports has generally increased in the past decade, significant inconsistency in the use of indicators for tracking targets remains, and there is limited alignment with the indicative list of global scale indicators set out in CBD decision XIII/28. This situation is partly due to the delayed identification of global indicators for the Aichi Biodiversity Targets after adoption of the Targets. To help inform the establishment of measurable targets for the post-2020 global biodiversity framework, NatureServe assessed the extent to which 20 Sixth National Reports use indicators from global and national sources and the coverage of indicators for reporting progress across all Aichi Biodiversity Targets.

Each identified indicator was categorized as either global (developed globally by an organisation not associated with the government that issued the report) or national (developed from datasets exclusively from the nation by government agencies or independent parties from within the nation for all or a sub-set of the country's land or marine territory). All indicators were extracted from the Sixth National Reports and, when relevant, documents linked in the reports that had indicator-specific information.

The analysis of the use of indicators in the Sixth National Reports showed a substantial increase in indicator use (from an average of 49 indicators in the Fifth National Reports to 84 in the Sixth National Reports), but with a continued wide diversity in the types of indicators used to indicate national target progress, and with many indicators limited in their use of time-series data. There was, however, a marked improvement in indicator use across all Goals of The Strategic Plan for Biodiversity (2011-2020)[12], particularly for Goals A (addressing the underlying causes of biodiversity loss) and E (implementation arrangements), but with a continued bias towards the use of indicators for Goals B (addressing direct pressures) and C (status of biodiversity).

Nationally generated indicators were used 11 times more frequently in the Sixth National Reports than global indicators. This means that Parties were mostly using their own indicator methodologies, thereby making it difficult to aggregate collective national progress to determine global progress. The average number of indicators used that follow the generic global indicators[13] provided in the indicative list set out in decision XIII/28 doubled, from 11 in the Fifth National Reports to 22 in the Sixth National Reports and the proportion of all indicators used that match the generic indicators, while still low, increased to 30% in the Sixth National Reports (from 22% the Fifth National Reports). However, just 16% of the indicators used in

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[12] **Goal A:** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society. **Goal B:** Reduce the direct pressures on biodiversity and promote sustainable use. **Goal C:** Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. **Goal D**: Enhance the benefits to all from biodiversity and ecosystem services. **Goal E:** Enhance implementation through participatory planning, knowledge management and capacity-building
[13] CBD/COP/DEC/XIII/28 includes a list of generic and specific indicators

the Sixth National Reports matched the specific indicators set out in decision XIII/28. The most frequently used generic indicators, as with the Fifth National Reports, relate to trends in forest and protected area extent, and trends in extinction risk and species populations. Use of generic indicators was more evenly spread across Strategic Plan for Biodiversity 2011-2020 Goals in the Sixth National Reports than in the Fifth National Reports, with two to four times as many indicators used for Goals B and C compared to Goals A, D, and E (in contrast to a six to eight-fold bias in the Fifth National Reports). The lack of data coverage (e.g. thematic, temporal and spatial) to ensure reliable production of indicators across all biomes and countries continues to limit full and effective use of indicators for tracking progress towards both national and global targets.

4. AVAILABILITY OF INDICATORS FOR THE POST-2020 FRAMEWORK

The Annex of this document contains tables (Table 1 and 2) on available indicators for measuring progress towards the draft components of goals and targets for the post-2020 global biodiversity framework, drawing from document CBD/SBSTTA/24/3/Add.1, which was produced following the discussions at the second meeting of the Open-ended Working Group in February 2020. This section of the document provides some summary information on the availability of indicators for the draft monitoring framework.

The information on available indicators has been compiled by UNEP-WCMC with input from members of the Biodiversity Indicators Partnership (BIP) and others working on indicator development. It does not represent a comprehensive search for all available indicators, but draws on information currently available to the BIP. The indicators in the Annex include available indicators and those which are in active development.

4.1 Overview of the status of available indicators for the proposed components of goals

The four proposed goals have 14 components and 57 monitoring elements. For the proposed goals a total of 67 possible indicators have been identified as being available now or under active development (Table 1; Annex).

Table 1. Summary of the data in the Annex for the proposed goals of the monitoring framework on the number of components, monitoring elements and available indicators. (If an indicator has been listed for more than one monitoring element of a goal it has only been counted once for this analysis).

Draft Goal	No. components	No. elements	No. indicators
A	6	29	57
B	3	17	6
C	2	2	1
D	3	9	3
Total	14	57	67

Goal A has about half of the total number of Goal components (6) and monitoring elements (29), and by far the majority of available indicators, with 57. A few indicators which are indices are listed for more than one monitoring element. Similarly, sub-sets of some indices for specific groups of species or ecosystems are included.

All of the monitoring elements for proposed Goal A have at least one available indicator, except for 'Trends in the diversity of wild species' and 'Trends in area of terrestrial and inland water areas conserved'.

For Goal B only 6 indicators are readily available for its 3 components and 17 elements.

Goal C has 2 components and 2 elements and only 1 currently-available indicator.

Goal D has 3 components and 9 elements, but its 3 available indicators are all for component D1 'Availability of sufficient financial resources', with no indicators currently identified for D2 'Sufficient capacity building, technology transfer and scientific cooperation' or D3 'Access to technology'.

All but one of the available indicators for the proposed goals have methodologies suitable for national use, and the majority of these global indicators are based on data that can be disaggregated for national use or are derived themselves from national data.

4.2 Overview of the status of available indicators for the proposed components of targets

The 20 proposed targets have 67 components and 162 elements for monitoring, and for these a total of 161 available indicators have been identified for the current document (Table 2; Annex).

Table 2. Summary of the data in the Annex for the proposed targets of the monitoring framework on the number of components, monitoring elements and available indicators. (If an indicator has been listed for more than one monitoring element of a target it has only been counted once for this analysis).

Target	No. components	No. elements	No. indicators
1	5	25	45
2	7	9	26
3	2	3	6
4	3	10	6
5	5	12	9
6	4	12	2
7	2	7	1
8	2	7	9
9	3	8	10
10	3	3	0
11	2	11	7
12	3	4	1
13	3	9	0
14	3	6	7
15	3	6	12
16	3	3	0
17	2	4	8
18	5	11	5
19	4	6	7
20	3	6	0
Total	**67**	**162**	**161**

Target 1 has 25 elements for monitoring and 45 available indicators. Target 2 has the second highest number of available indicators, with 26. Targets 10, 13, 16 and 20 have no available indicators identified at this time.

Out of the 20 targets, 12 have at least one component without any available indicators. Only targets 1, 2, 4, 5, 8, 11, 14 and 17 have at least one available indicator for all their components. Of the 67 target components, 26 (39%) do not have a currently-available indicator. Of the 162 elements for monitoring, 79 (49%) do not yet have an available indicator.

Of the 161 available indicators identified so far for the proposed targets, all but five have methodologies suitable for national use, and 140 have global indicator data that is based on national data or which can otherwise be disaggregated for national use.

4.3 Indicators of relevance to other processes and MEAs

Although provisional input from partners of the BIP is reflected in the Annex, the mapping of indicators across monitoring elements of proposed goals and targets has not yet included a thorough analysis of the overlap with indicators used for other processes and MEAs. For example, a full mapping of indicators and data collected by national statistics offices and custodian agencies for the SDGs, or those used as measures in the IPBES Global Assessment has yet not been undertaken. Additional input will be sought from other custodian agencies and indicator producers from other MEAs and the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) will also be engaged to provide inputs from any existing indicators or those currently in development. The information gathered will serve to update the mapping and analysis of indicators across monitoring elements for the proposed goals and targets and will be made available to inform discussions at SBSTTA-24.

4.4 Gaps in the current suite of indicators available for the post-2020 framework

Provisional gaps were identified in this analysis through assessing the number and nature of monitoring elements, proposed goals and targets for which no indicators were suggested by members of the BIP, or where the indicators suggested to measure progress are not currently available or up to date.

As noted above, the gaps in the current framework need not be a barrier to the adoption and implementation of ambitious goals and targets in the post-2020 framework. There are means to address gaps in the framework, and these are outlined in section 4.6 below. However, there are current gaps in known and available indicators in relation to the proposed goals, targets and monitoring elements that relate to: the maintenance of genetic diversity; nature's material contributions including food, water and others; nature's non material contribution; access to genetic resources and benefits; financial resources; capacity building, technology transfer and scientific cooperation; and access to technology. Such gaps also reflect the awareness of indicators through current BIP members, and the need to strengthen engagement with additional institutions working in these areas. This also highlights the potential contribution of local actions notably by IPLCs measured through Local Biodiversity Outlooks, to support global and national indicators

4.5 Indicators under development

Ideas and options for new indicators under development that may be used to measure progress towards future goals and targets have also been explored with various partners. This has generated additional inputs on potential indicators for further consideration. Efforts to generate new indicators are particularly focussed at measuring progress towards the goals and targets that relate to ecosystems and genes, the sustainable

use of biodiversity, nature's contributions to people, and benefit sharing. These potential indicators are often not yet published or otherwise relate to work that is in the process of being published – and hence they cannot be fully evaluated at this time. However, they are included to give Parties a sense of their anticipated availability in 2021.

4.6 Support to explore gaps and repurpose/develop new indicators

One major gap in the indicators identified to date for the draft monitoring framework is for 'Natures Contributions to People' proposed goal and targets. This gap may be possible to fill through a more thorough review of available SDG indicators, the indicators used in the IPBES global assessment (2019), the draft IPBES sustainable use and values assessments, and other sources.

It may be necessary to find and resource additional and new indicators for the newly adopted goals and targets. However, some existing indicators and their underlying data can be adapted to address new issues. For example, trends in the extinction risk of sets of species can be disaggregated to indicate the impact of different pressures on species, such exploitation, or the status of species groups such as pollinators.

A major consideration will be the availability of resources to support new indicator development, or to support the redevelopment of existing indicators to provide more direct measures of newly adopted goals and targets. From 2015 to 2018 UNEP-WCMC led a 'Mind the Gap' project, with support from UNEP and European Commission. In this project, the BIP produced a review of the global indicator suite, as an input to a revised list of indicators for the Strategic Plan for Biodiversity 2011-2020. An open consultation followed, to identify existing global indicators which could be brought in to the BIP to fill gaps identified. In response to a call for proposals, three new indicators were commissioned in 2017 by the Project to fill these gaps, and the methods for these indicators have been published in peer-reviewed scientific journals.

With support from UNEP and the European Commission, the BIP is planning to establish a similar call in response to the post-2020 global biodiversity framework. Resources are sought to expand the call, to allow for a greater number of identified indicators gaps to be filled as necessary. New indicators would ideally be ready for consideration by CBD COP 16 so that these can be effectively used to monitor progress towards relevant elements of goals/targets. Such efforts may be helpful considerations for Parties in considering new and ambitious targets for the post-2020 framework, by providing potential solutions and a process for those targets for which there are indicator gaps.

5. BASELINES TO INFORM PROGRESS TOWARDS GOALS AND TARGETS IN THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

Baselines set the context within which indicator trends can be evaluated, and should be measurable and relevant to the desired goal or target outcome. Baselines can be set with reference to a directly observable record/state or can be inferred using models or proxies if direct observations are not possible.[14]

While the issue of baselines has not yet been substantively discussed in the context of the development of the post-2020 global biodiversity framework, various options and considerations have been expressed through submissions or interventions, including:

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[14] UNEP/CBD/SBSTTA/9/10

- **Pre-human disturbance**: Such a baseline might be relevant for some measures of the status of biodiversity, for instance using a baseline of potential natural vegetation.[15] This baseline relies on the use of proxies or inference from models. Proxies might include the state of more intact ecosystems in the present, whilst models could be used to infer the potential state prior to human (direct or indirect) disturbance. Such models and layers of intactness are currently available at a global scale but include a high degree of uncertainty. Setting up a pre-human disturbance baseline would allow for the consideration of the history and context of a given region, although the uncertainties inherent in modelling potential states of natural vegetation at national level are high.
- **Pre-industrial (e.g. c1750):** Most of the global impacts to biodiversity have occurred since industrialisation. A pre-industrial baseline could be difficult to measure as such historical data is not available for most indicators and those that do contain a greater level of uncertainty than more recent data-points. Such baselines could be inferred as above, and although levels of uncertainty remain significant, available global datasets could be supplemented with national data on habitats or land use.
- **1970:** A 1970 baseline has been used in the IPBES Global Assessment Report on Biodiversity and Ecosystem Services and other recent assessments. The last 50 years has seen a global intensification of agricultural practices, harvesting of resources and urbanisation, caused by technological changes and expanding global population. Although most indicators based on remote sensing are not able to provide data back to 1970, sufficient data exists to measure many indicators from a 1970 baseline.
- **Recent:** More recent baselines can also be considered. For example, these could be linked to events such as the adoption of the CBD, or the year 2000 (representing a new millennium and two decades to 2020), or the year 2010 relating to progress towards the 2010 target and the year of the adoption of the Strategic Plan for Biodiversity 2011-2020. In relation to trends, the most data-rich baselines are the periods between 2000, 2010, and 2020. This includes data that is more widely available across regions and taxonomic groups, and data-points with lower levels of uncertainty. However, a recent baseline would de-emphasise the significant changes to biodiversity that have occurred prior to the current century. **2020:** A current-day baseline (or trends from 2010-2020 during the most recent decade) would allow efforts to be focused on the improvement of the recent and existing state of indicators. It emphasises recovery and removes the requirement to determine historical states. However, a 2020 baseline, as with the 2000 baseline, de-emphasises the trends in biodiversity and responses prior to this date, and due to the lag-time in reporting and compilation, some data are not yet available for the assessment of 2020 baselines.

6. TRACKING PROGRESS TOWARDS THE POST-2020 FRAMEWORK

As part of the overall monitoring framework for the post 2020 global biodiversity framework, a robust and comprehensive means of tracking progress in as near real time as possible will be crucial in helping Parties to understand in a timely manner where additional efforts, resources and capacity may be required. Ongoing tracking of progress will enable Parties to be proactive in prioritizing action and promoting adaptive management to accelerate implementation towards the adopted goals and targets of the post 2020 global biodiversity framework.

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[15] https://www.cbd.int/api/v2013/documents/2478769B-D32A-CBFE-1936-4D2895EF9F61/attachments/Brazil-3.pdf

At present much of this information is scattered across multiple sources and irregularly updated. No single platform currently exists that brings together the information needed to provide an ongoing assessment of progress towards global biodiversity targets in an accessible and visually compelling way. Efforts are therefore underway to explore a target tracking tool that could take the form of an online data platform, displaying progress towards the post-2020 goals and targets at global, regional and national levels. Scoping work in creating user driven visualisations have been already been undertaken for the Red List Index and Protected Area Coverage of Key Biodiversity Areas. A further phase of development will endeavour to visualise, where measurable, the commitments of Parties towards targets as well as progress on implementation as measured by indicators.

To provide a regularly updated status of progress towards the targets, such a tool will need to draw upon regular updates of global, regional, and national indicators from a range of indicator data sources from many institutions including those within the Biodiversity Indicators Partnership (BIP) and where possible also benefit from national reporting data showcasing national contributions to the global targets.

7. FINAL REMARKS AND CONCLUSIONS

The development of a monitoring framework for the post-2020 global biodiversity framework is an important opportunity to use the lessons derived from monitoring progress under the Strategic Plan for Biodiversity 2011-2020, the SDGs, and other initiatives. The new monitoring framework is an opportunity to develop transparent, innovative and effective approaches to support implementation of the future global biodiversity framework. As further iterations of the draft monitoring framework are developed, refreshed and updated versions of the analyses presented in this document and its annexes will be provided.

An analysis of possible indicators for use in the monitoring framework for the post-2020 global biodiversity framework, drawing on the knowledge of the Biodiversity Indicators Partnership and others, has identified that there are many available indicators linked to the proposed goals and targets; however, these are highly unevenly distributed with key indicator gaps in some goals and targets. Some of the identified gaps may be due to insufficient information, and additional work is required to identify available indicators compiled and delivered by organisations beyond current BIP membership.

When considering the future use of indicators to track progress in implementation of the post-2020 global biodiversity framework, Parties may wish to reflect on the following:

- Measurability (quantitative or qualitative) of goals and targets remains key to the identification of suitable indicators for the monitoring framework, and the specific wording of goals and targets is important in this regard.
- Indicator selection will require careful consideration of criteria around data availability, robust methodology, global and national suitability and alignment with goals and targets.
- Identifying indicators which can align with other relevant reporting processes remains a priority, both for consistency and cost-effectiveness
- Development and support of institutional capacity to provide up-to-date and timely information is necessary for ensuring sustainable delivery of the necessary indicators.
- Opportunities for deriving gender-disaggregated indicators for the framework need further investigation, particularly in the context of the wider scope of the SDGs.

- Many global indicators can be disaggregated to national level or are otherwise nationally derived and compiled, and could therefore form the basis of a set of headline indicators to be used for consistent national reporting on implementation of the framework.
- Any such headline indicators could be augmented through use of a broader set of available indicators.
- The use of indicators in National Reports has increased, but nationally generated indicators still dominate in reporting compared to the use of global indicators.
- The availability of data and indicators is likely to be an important consideration in the selection of baselines across the indicator suite.

Annex

AVAILABLE INDICATORS IDENTIFIED BY THE BIP FOR MONITORING ELEMENTS OF THE PROPOSED GOALS AND TARGETS

Table 1. Available indicators for monitoring elements of the proposed goals

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
GA1. Increased extent of natural ecosystems (terrestrial, freshwater and marine ecosystems)	Trends in area of forest ecosystems	Forest area as a percentage of total land area	FAO	X		2020	1990-2015	Y	Y	N		Y SDG indicator 15.1.1	Y	
		Tree cover loss	WRI (Global Forest Watch)	X	N/A	2020	2001 – 2020, annually	Y			N	N	N	
		Primary forest deforestation	WRI (Global Forest Watch)	Y			2002, annually	Y	Y		N	N	N	
		Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
	Trends in area of dry and sub-humid lands	Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
	Trends in area of grasslands	Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
		Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
	Trends in area of other terrestrial ecosystems	Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	Y		N	N	IPBES
		Biodiversity Habitat Index	CSIRO	X	N/A	2015	2005, 2010, 2015	Y	Y	Y		N	Y	
		Ecosystem Area Index Ecosystem Health Index Red List Index of Ecosystems	IUCN	Y X (for some regions)	2020	2020	5 years (depending on the region)	Y	Y	Y	N	N	N (application pending)	
		Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
	Trends in area of mangroves	Continuous Global Mangrove Forest Cover	Salisbury University	X		2020	2000-2014, every 5 years	Y	Y	N		N	Y	

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		Trends in mangrove extent	Global Mangrove Watch	X		2018	1996-2016		Y	N	N	Y SDG indicator 6.6.1		Ramsar
	Trends in area of coral reefs	Live coral cover	Global Coral Reef Monitoring Network; Global Ocean Observing System	X		2020	1970s, annual	Y	Y	Y	Y	N	Y	IPBES
		Coral Reef extent and condition	Global Coral Reef Monitoring Network	Y	2021		1980s/1990s	Y	Y			N	N	
		Global coral reef extent	UNEP-WCMC, WorldFish Centre, WRI, TNC and partners	X		2018				Y				
	Trends in area of seagrass ecosystems	Global seagrass extent	UNEP-WCMC, Fred Short, Smithsonia	X		2020				Y				

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		n, and C-GRASS partners (GOOS seagrass EOV network)												
	Trends in area of other marine and coastal ecosystems	Global saltmarsh extent	UNEP-WCMC and partners	X		2019				Y				
	Trends in area of wetlands	Wetland Extent Trends Index	Ramsar Convention	X		2020	1970-2015	Y	Y			N	Y	Ramsar, CITES, CMS, IPBES
		Change on the extent of water related ecosystems	Ramsar Convention on Wetlands-UNEP co-custodian agencies	x			2018 (triennial Ramsar)	Y	Y	Y		Y SDG Indicator 6.6.1		Ramsar Convention on Wetlands-SDG 6
GA2. Ecosystem integrity and connectivity (terrestrial, freshwater and	Trends in fragmentation and quality of forest ecosystems	Forest area as a percentage of total land area	FAO	X	N/A	2020	2000-2015	Y	Y	N		Y SDG indicator 15.1.1	Y	

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marine ecosystems)		Red List Index (forest-dependent species)	IUCN	X		2020	1993 – 2020, annually	Y	Y	N	N	N	Y	
		Tree cover loss	WRI (Global Forest Watch)	X	N/A	2020	2001 – 2020, annually	Y			N	N	N	
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	N		N	N	IPBES
	Trends in integrity for all ecosystems	Ecosystem Area Index Ecosystem Health Index Red List Index of Ecosystems	IUCN	Y X (for some regions)	2020	Depends on the region	~5 years	Y	Y	Y	N	N	N (application pending) N	
		Proportion of land that is degraded over total land area	UNCCD	X	N/A	2015	2000-2015, every four years	Y	Y	Y	N	Y SDG indicator 15.3.1	Y	UNCCD
		Tree cover loss	WRI (Global Forest Watch)	X	N/A	2020	2001 – 2020, annually	Y			N	N	N	

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Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
		Forest Landscape Integrity Index	WCS and partners		Done	2018	N	Y	Y			N	N	
		Ecosystem Intactness Index	WCS and partners	Y	Done	2013	Annually from 2020	Y	Y			N	N	
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	N		N	N	IPBES
		Temporal biodiversity Intactness Index for all land use types	UNEP-WCMC and NGS	Y	2021				Y		N	N	N	
	Trends in fragmentation and quality of dry and sub-humid lands	Ecosystem Intactness Index	WCS and partners	Y	Done	2013	Annually from 2020	Y	Y			N	N	
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	N		N	N	IPBES
	Trends in fragmentation and quality	Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	N		N	N	IPBES

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	of grasslands	Ecosystem Intactness Index	WCS and partners	Y	Done	2013	(annually from 2o2o)	Y	Y			N	N	
	Trends in fragmentation and quality of other terrestrial ecosystems	Species Habitat Index	MOL Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	N		N	N	IPBES
		Biodiversity Habitat Index	CSIRO	X	N/A	2015	2005, 2015 (every 5 years)	Y	Y	Y		N	Y	
		Bioclimatic Ecosystem Resilience Index (BERI)	CSIRO	X	N/A	2015	2005, 2015 (every 5 years)	Y	Y	N	N	N	Y	
		Ecosystem Area Index Ecosystem Health Index Red List Index of Ecosystems	IUCN	Y X (for some regions)	2020	Depends on the region	~5 years	Y	Y	Y	N	N	N (application pending)	
		Biotic integrity index	UNEP-WCMC	Y	2021	N/A	2010	Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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		Ecosystem Intactness Index	WCS and partners	Y	Done	2013	Annually from 2020	Y	Y			N	N	
	Trends in fragmentation and quality of mangroves	Continuous Global Mangrove Forest Cover	Salisbury University	X		2020	2000-2014, every 5 years	Y	Y	N		N	Y	
	Trends in fragmentation and quality of coral reefs	Live coral cover.	Global Coral Reef Monitoring Network; Global Ocean Observing System	Y		2020	1970s-2000s, annually	Y	Y	Y	Y	N	Y	IPBES
		Fleshy algae cover	Global Coral Reef Monitoring Network	X		2020	1980s/1990s	Y	Y	Y		N	N	
		Cover of key benthic groups	Global Coral Reef Monitoring Network	Y	2022		1980s/1990s	Y	Y	Y		N	N	

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		Red List Index (coral species)	IUCN	X		2008	1998, updated periodically	Y	Y	N	N	N	Y	Ramsar
		Structural Complexity	WCS	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	
		Carbonate budgets	University of Exeter	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	
	Trends in fragmentation and quality of other marine and coastal ecosystems	Red List Index of Ecosystems Ecosystem Area Index Ecosystem Health Index	IUCN	Y X (for some regions)	2020	Depends on the region	~5 years	Y	Y	Y	N	N	N (application pending)	
		Red List Index (marine species)	IUCN	X		2020	1993 – 2020 annually	Y	Y	N	N	N	N	
	Trends in fragmentation and quality of inland wetlands	Wetland Extent Trends Index	Ramsar Convention	X		2020	1970-2015	Y	Y			N	Y	Ramsar, CITES, CMS, IPBES
		Red List Index (wetland species)	IUCN	X		2020	1993 – 2020, annually	Y	Y	N	N	N	N	Ramsar

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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GA3. Prevent extinction and improve the conservation status of species	Trends in number of extinctions	Number of species extinctions (birds and mammals).	IUCN / BirdLife International	X		2020	1990, decadally	Y	N	N	N	N	Y	IPBES
		Number of extinctions prevented by conservation action	IUCN / BirdLife International	X		2020	1993, decadally	Y	N	N	N	N	Y	
		Red List Index	IUCN & BirdLife International	X		2020	1993, updated annually	Y	Y	N	Y	Y SDG indicator 15.5.1	Y	CMS, IPBES, Ramsar
		Species Habitat Index	MOL, Yale University, NGS	X	NA	2020	2001-2018, annually	Y	Y	N		N	Y	IPBES
	Trends in conservation status of species	Red List Index	IUCN & BirdLife International	X		2020	1993, annually	Y	Y	N	Y	Y SDG indicator 15.5.1	Y	CMS, IPBES, Ramsar

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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		Percentage of threatened species that are improving in status.	IUCN	X	2024		1993	Y	N	N	N	N	N	
		Species Protection Index	Yale University Map of Life	X	N/A	2020	2001 to 2018, annually	Y	Y	N	N	N	Y	IPBES
		Wild Bird Index (WBI)	RSPB & BirdLife International	X	N/A	2019	1968, annual	Y	Y	Y	Y	N	Y	CMS
		Number of certified forest areas under sustainable management with verified impacts on biodiversity conservation	FSC	X	N/A	2020	2018, every five years	Y	Y	Y	N	N	N	
GA4. Increase the number and health of	Trends in species abundance	Living Planet Index (LPI).	ZSL/WWF	X		2020	1970, available every 2 years	Y	Y	N	Y	N	Y	CMS, Ramsar, IPBES

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~~common~~ species		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018 annually	Y	Y	Y		N	N	IPBES
		Green List of Species	IUCN & Oxford University	Y	2021			Y	Y	Y	N	N	N	
		Wild Bird Index (WBI)	RSPB & BirdLife International	X	N/A	2019	1968, annual	Y	Y	Y	Y	N	Y	CMS
		Fish abundance and biomass	Global Coral Reef Monitoring Network	Y	2021		1990s	Y	Y	Y		N	N	
GA5. Maintain Genetic diversity	Trends in the diversity of wild species	Comprehensiveness of conservation of socioeconomically as well as culturally valuable species.	CIAT, Crop Trust	X		2018	2018; every 3-5 years	Y	Y	Y		N	Y	
	Trends in the diversity of cultivated plants, farmed and	Agrobiodiversity Index	Alliance Bioversity & CIAT	Y	2021		2021, annually	Y	Y	Y		N	N	
		Number of plant genetic	FAO	X		2019	2000-2019	Y	Y	Y		Y	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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	domesticated animals	resources for food and agriculture secured in medium- or long-term conservation facilities										SDG indicator 2.5.1a		
		Proportion of local breeds classified as being at risk, not at risk or at an unknown level of risk of extinction.	FAO	X		2019	2000-2019	Y	Y	Y		Y SDG indicator 2.5.2	Y	
		Comprehensiveness of conservation of socioeconomically as well as culturally valuable species.	CIAT, Crop Trust	X		2018	2018; every 3-5 years	Y	Y	Y		N	Y	
	Trends in the diversity of wild relatives	Red List Index (wild relatives of domesticated animals).	IUCN & BirdLife International	X	N/A	2020	1988, updated annually	Y	Y	N	N	N	Y	CMS, IPBES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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		Crop Wild Relative Index	Alliance Bioversity and CIAT & IUCN/CWRSG	Y	2021		2021, annually	Y	Y	Y		N	N	
		Comprehensiveness of conservation of socioeconomically as well as culturally valuable species.	CIAT, Crop Trust	X		2018	2018; every 3-5 years	Y	Y	Y		N	Y	
GA6. Protection of critical ecosystems	Trends in area of terrestrial and inland water areas conserved	Number of certified forest areas under sustainable management with verified impacts on watershed conservation	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	Y	N	
	Trends in area of coastal and	Coastal protection index	NatCap	Y				Y	Y		N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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	marine areas conserved	Proportion of assessed marine protected areas that are ecologically effective	Reef Life Survey	Y	2022		2014, ~5-10 years	Y	Y			N	N	
	Trends in areas of particular importance for biodiversity conserved	Protected Area Coverage of Key Biodiversity Areas.	BirdLife International, UNEP-WCMC & IUCN	X	N/A	2020	1900, annually	Y	Y	Y	Y	Y (for marine, terrestrial, freshwater and mountain subsets) SDG indicator 14.5.1, 15.1.2, 15.4.1	Y	Ramsar, IPBES
		Number of certified forest areas under sustainable management with verified impacts on biodiversity conservation	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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		Species Protection Index	Yale University Map of Life	X	N/A	2020	2001 to 2018, annually	Y	Y	N	N	N	Y	IPBES
		Proportion of KBAs in favourable condition	BirdLife International on behalf of the KBA Partnership	Y	2025			Y	Y	Y	N	N	N	
	Trends in areas of particular importance for ecosystem services conserved	Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	BirdLife International, UNEP-WCMC & IUCN	X	N/A	2020	1819 – 2020, annually	Y	Y		Y	N	Y	
		Number of certified forest areas under sustainable management with High Conservation Values	FSC	Y	2022	N/A	N/A	Y	Y	Y	N	N	N	

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	Trends in ecological representativeness of areas conserved	Protected Area Representativeness Index.	CSIRO	X	N/A	2018	1970 to 2010: decadal 2010 onwards: biennial	Y	Y	N	N	N	Y	
	Trends in ecological representativeness of areas conserved	Species Protection Index	Yale University Map of Life	X	N/A	2020	2001 to 2018, annually	Y	Y	N	N	N	Y	IPBES
GB1. Nature's regulating contributions including climate regulation, disaster prevention and other	Trends in habitat creation and maintenance	Number of certified forest areas under sustainable management with verified impacts on habitat conservation/ restoration	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	
	Trends in pollination and dispersal of seeds and	Red List Index (pollinating species)	IUCN & BirdLife International	X		2020	1993 – 2020, updated	Y	Y	N	Y	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
	other propagules						periodically							
	Trends in regulation of air quality	To be determined												
	Trends in regulation of climate	Number of certified forest areas under sustainable management with verified impacts on carbon sequestration/storage	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	
	Trends in regulation of ocean acidification	To be determined												
	Trends in regulation of freshwater quantity, *quality*, location and timing	Number of certified forest areas under sustainable management with verified	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
		impacts on water quality												
	Trends in regulation of freshwater and coastal water quality	To be determined												
	Trends in formation, protection and decontamination of soils and sediments	To be determined												
	Trends in regulation of hazards and extreme events	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	UNISDR	X	N/A	2018	2018	Y	Y	N		Y SDG indicator 11.5.1	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
	Trends in regulation of detrimental organisms and biological processes	To be determined												
GB2. Nature's material contributions including food, water and others	Trends in the provision of energy supply from biological resources	To be determined												
	Trends in the provision of food and feed from biodiversity	Red List Index (impacts of fisheries)	IUCN & BirdLife International	X		2020	1993 – 2020, updated periodically	Y	Y	N	N	N	Y	
	Trends in the provision of materials and assistance from biodiversity	To be determined												
	Trends in the provision of medicinal, biochemical	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
	and genetic resources from biodiversity													
GB3. Nature's non-material contributions including cultural	Learning and inspiration	To be determined												
	Physical and psychological experiences	To be determined												
	Supporting identities	To be determined												
	Maintenance of options *Cultural values*	Number of certified forest areas under sustainable management with verified impacts on recreational services	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	
GC1. Access to Genetic resources	Trends in access to genetic resources	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
GC2. Sharing of the benefits	Trends in the benefits from the access to genetic resources shared	Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits	Secretariat of the CBD	Y	N/A	2018	2016-2018	Y	Y	Y		Y SDG indicator 15.6.1	N	
GD1. Availability of sufficient financial resources	Trends in the mobilization financial resources from public international financial flows	Official development assistance for biodiversity	OECD	X	N/A	2018	2002-2018, annually	Y	Y	Y		Y SDG indicator 15.a.1	Y	
	Trends in public domestic resource mobilization	Revenue from biodiversity related economic instruments	OECD	X	N/A	2020	1990-2020, annually	Y	Y	Y		Y SDG indicator 15.a.1	N	
	Trends in the mobilization of financial													

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
	resources from private sector	To be determined												
	Trends in the mobilization of financial resources from charitable organisations	Biodiversity-related philanthropic funding	OECD	X	N/A	2018	2017-2018	N	N	Y		N	N	
GD2. Sufficient capacity building, technology transfer and scientific cooperation	Trends in support to capacity building	To be determined												
	Trends in capacity building activities	To be determined												
	Trends in technology transfer	To be determined												
	Trends in scientific cooperation	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the 2050 Goal	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data are aggregated to from global indicator (Y/N)	Used in GBO4(Y/N)	SDG indicator (Y/N)	BIP Indicator	Indicator used to measure other MEAs or processes
GD3. Access to technology	Trends in access to relevant technologies	To be determined												

Table 2. Available indicators for monitoring elements of the proposed targets

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
Reducing threats to biodiversity														
T1.1. Increase in area of terrestrial, freshwater and marine ecosystems under spatial planning	Trends in area under spatial land-use plans	Percentage of spatial plans utilising information on Key Biodiversity Areas	KBA Partnership	Y	2025				Y	Y	N	N	N	
		Percentage of plans using SPI high-res spatial priority maps	MOL, Yale University, EOWBF	Y					Y	N	N	N	N	
	Trends in area under integrated coastal zone management	Proportion of national exclusive economic zones managed using ecosystem-based approaches	UN Environment Programme - Regional Seas	Y	2021		Every 5 years	Y	Y	Y		Y SDG indicator 14.2.1	N	
	Trends in area under marine	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	**Monitoring Elements**	**Indicators**	**Responsible Institution**	**Available today (X) or under active development (Y)**	**Date of availability for indicator in development (Year)**	**Year of last update (e.g. 2019)**	**Time series and frequency of updates (e.g. 1985-2019, annually)**	**Methodology available for national use (Y/N)**	**Global indicator can be disaggregated for national use (Y/N)**	**National data aggregated to form global indicator (Y/N)**	**Used in GBO4 (Y/N)**	**SDG indicator (Y/N)**	**BIP Indicator (Y/N)**	**Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)**
	spatial planning													
T1.2. Prevention of reduction and fragmentation of natural habitats due to land/sea use change	Trends in extent and rate of change of forest ecosystems	To be determined												
	Trends in extent and rate of change of dry and sub-humid lands	Trends in land cover change	UNCCD	X	N/A	2018	2000-2018, annually	Y	Y	Y	N	Y SDG indicator 15.3.1 sub-indicator on land cover	N	UNCCD
		Forest area as a percentage of total land area	FAO	X	N/A	2020	2000-2015	Y	Y	N		Y SDG indicator 15.1.1	Y	
		Tree cover loss	WRI (Global Forest Watch)	X	N/A	2020	2001 – 2020, annually	Y			N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Primary forest deforestation	WRI (Global Forest Watch)	X	N/A		2002, annually	Y	Y		N	N	N	
		Forest Landscape Integrity Index	WCS	Y	2019	2019	Annually		Y	Y	N	N	N	
		Red List Index (forest-dependent species)	IUCN	X	N/A	2020	1993 – 2020, annually	Y	Y	N	N	N	Y	
		Forest Specialists Living Planet Index (LPI)	ZSL/WWF	X	N/A	2018	1970, annually	Y	Y	N	N	N	Y	
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES
		Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
		Ecosystem Intactness index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in extent and rate of change of in grasslands	Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES
		Ecosystem intactness index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
	Trends in extent and rate of change of other terrestrial ecosystems	Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES
		Biodiversity Habitat Index	CSIRO	X	N/A	2015	2005, 2010, 2015	Y	Y	Y		N	Y	
		Ecosystem Area Index Ecosystem Health Index Red List Index of Ecosystems	IUCN	Y X (for some regions)	Depends on the region (2020 or earlier)	Depends on the region	5 years (depending on the region)	Y	Y	Y	N	N	N (application pending)	
		Change in Ecosystem composition, structure and function	NASA/JPL	Y	2026	N/A	2026	Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Biotic integrity index	UNEP-WCMC	Y	2021	N/A	2010	Y	Y		N	N	N	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
		Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
	Trends in extent and rate of change of mangroves	Continuous Global Mangrove Forest Cover	Salisbury University	X	N/A	2020	2000-2014, every 5 years	Y	Y	N		N	Y	
		Trends in mangrove extent	Global Mangrove Watch	X	N/A	2018	1996-2016		Y	N	N	Y SDG indicator 6.6.1	N	Ramsar
	Trends in extent and rate of change of coral reefs	Live coral cover	Global Coral Reef Monitoring Network	Y		2020	1970s-2000s, annually	Y	Y	Y	Y	N	Y	IPBES
		Hard coral genera richness	Global Coral Reef	X	2021							N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
			Monitoring Network											
		Coral Reef extent and condition	Global Coral Reef Monitoring Network	Y	2021		1980s/1990s	Y	Y			N	N	
		Fleshy algae cover	Global Coral Reef Monitoring Network	X	N/A	2020	1980s/1990s	Y	Y	Y		N	N	
		Cover of key benthic groups	Global Coral Reef Monitoring Network	Y	2022		1980s/1990s	Y	Y	Y		N	N	
		Fish abundance and biomass	Global Coral Reef Monitoring Network	Y	2021		1990s	Y	Y	Y		N	N	
		Red List Index (coral species)	IUCN	X		2008	1998, updated periodically	Y	Y	N	N	N	Y	Ramsar
		Structural Complexity	WCS	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Carbonate budgets	University of Exeter	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	
		Large Reef Fish Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y	Y		N	Y	
		Reef Fish Thermal Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y	Y		N	Y	
	Trends in extent and rate of change of seagrass ecosystems	Global seagrass extent	UNEP-WCMC, Fred Short, Smithsonian, and C-GRASS partners (GOOS seagrass EOV network)	X	2020	2020	N/A			Y		N	N	
	Trends in extent and rate of change of other marine and coastal ecosystems	Ecosystem Area Index Ecosystem Health Index Red List Index for Ecosystems	IUCN	Y X (for some regions)	2020	Depends on the region	~5 years	Y	Y	Y	N	N	N (application pending) N	
		Cumulative human	National Centre for	X	N/A			Y	Y			N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		impacts on marine ecosystems.	Ecological Analysis and Synthesis											
		Red List Index (marine species)	IUCN	X		2020	1993 – 2020 annually	Y	Y	N	N	N	N	
		Large Reef Fish Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y	Y		N	Y	
		Reef Fish Thermal Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y				Y	
	Trends in extent and rate of change of wetlands	Wetland Extent Trends Index	Ramsar Convention	X	N/A			N	N					Ramsar
		Change on the extent of water related ecosystems	Ramsar Convention on Wetlands-UNEP co-custodian agencies	X			2018 (triennial for Ramsar)	Y	Y	Y SDG indicator 6.6.1		Y		Ramsar Convention on Wetlands-SDG6

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Red List Index (wetland species)	IUCN	X		2020	1993 – 2020, annually	Y	Y	N	N	N	N	Ramsar
	Trends in forest and agriculture lands as a proportion of total land area	To be determined												
	Trends in farmland biodiversity and sustainability of agricultural land	Farmland Biodiversity Score	ICRAF	Y	2021		Sub-annually	Y	Y	Y	N	N	N (application pending)	
		Percentage of cropped landscapes with at least 10% natural land	Alliance of Bioversity and CIAT	X		2015	Annually	Y	Y	Y				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T1.3. Priority retention of intact / wilderness areas	Trends in extent of natural intact / wilderness	Human footprint index	WCS/UQ/UNBC/NGS	Y	2020	2013	1993	Y	Y			N	N	
		Ecosystem Area Index Ecosystem Health Index Red List Index of Ecosystems	IUCN	Y X (for some regions)	2020	2020	5 years (depending on the region)	Y	Y	Y	N	N	N (application pending)	
T1.4. Restoration of degraded ecosystems	Trend in the area of degraded forest ecosystems restored	Global Ecosystem Restoration Index	GEO BON - iDiv	X	N/A			Y	Y			N	N	
		Proportion of land that is degraded over total land area	UNCCD	X	N/A	2015	2000-2015, every four years	Y	Y	Y	N	Y SDG indicator 15.3.1	Y	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trend in the area of degraded dry and sub-humid lands restored	Global Ecosystem Restoration Index	GEO BON - iDiv	X	N/A			Y	Y			N	N	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
	Trend in the area of Degraded grassland ecosystems restored	Global Ecosystem Restoration Index	GEO BON - iDiv	X	N/A			Y	Y			N	N	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
	Trend in the area of Degraded other terrestrial ecosystems restored	Global Ecosystem Restoration Index	GEO BON - iDiv	X	N/A			Y	Y			N	N	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
	Trend in the area of Degraded	Global Ecosystem	GEO BON - iDiv	X	N/A			Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	mangrove forest restored	Restoration Index												
	Trend in the area of Degraded corals restored	Global Ecosystem Restoration Index	GEO BON – iDiv	X	N/A			Y	Y			N	N	
	Trend in the area of Degraded seagrass restored	Global Ecosystem Restoration Index	GEO BON – iDiv	X	N/A			Y	Y			N	N	
	Trend in the area of Degraded other marine and coastal ecosystems restored	Global Ecosystem Restoration Index	GEO BON - iDiv	X	N/A			Y	Y			N	N	
	Trend in the area of Degraded wetlands restored	Global Ecosystem Restoration Index	GEO BON – iDiv	X	N/A			Y	Y			N	N	
	Trend in the area of	Global Ecosystem	GEO BON – iDiv	X	N/A			Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	converted agricultural lands restored	Restoration Index												
		Farmland Biodiversity Score	ICRAF	Y	2021		Sub-annually	Y	Y	Y		N	N (application pending)	
		Percentage of cropped landscapes with at least 10% natural land	Alliance of Bioversity and CIAT	X		2015	Annually	Y	Y	Y				
T1.5. Maintenance and restoration of connectivity of natural ecosystems	Trends in habitat connectivity	Protected Area Connectedness Index	CSIRO	X	N/A	2019		Y	Y	N	N	N	Y	
		Bioclimatic Ecosystem Resilience Index (BERI): present-day connectedness component	CSIRO	X	N/A	2015	2005, 2010, 2015	Y	Y	N	N	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Measures for connectivity (e.g. Protected Connected (Protconn).	European Commission	X	N/A			Y	Y			N	Y	
		Ecosystem Intactness index	WCS/UQ/UNBC	Y	2020		1993	Y	Y				N	
		Red List Index (migratory species)	IUCN, BirdLife	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
T2.1. Area of terrestrial, freshwater and marine ecosystem under protection and conservation	Trends in extent of protected areas	Protected area coverage.	UNEP-WCMC	X	N/A	2020		Y	Y		Y	N	Y	
	Trends in extent of areas under other area-based conservation measures	OECM coverage	UNEP-WCMC	Y	2021	N/A		Y			N	N	N	
		Area of forest under sustainable management: total FSC and PEFC forest	PEFC, FSC	X	N/A	PEFC: 2020	PEFC: 1999-2010: annually 2011-2020	Y	PEFC: Y	PEFC: Y	Y	N	Y	N

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		management certification.					quarterly							
		Progress towards sustainable forest management	FAO	X	N/A	2020	2000 - 2018	Y	Y	Y	Y	Y SDG indicator 15.2.1	Y	
T2.2. Areas of particular importance for biodiversity are protected and conserved as priority 14.5.1, 15.1.2, 15.4.1	Trends in proportion of areas of particular importance for biodiversity protected and conserved	Protected Area Coverage of Key Biodiversity Areas	BirdLife International, UNEP-WCMC & IUCN	X	N/A	2020	1900, annually	Y	Y	Y	Y	Y (marine, terrestrial, freshwater and mountain subsets) SDG indicator 14.5.1, 15.1.2, 15.4.1	Y	Ramsar, IPBES
		Proportion of important sites for terrestrial and freshwater biodiversity	BirdLife International, UNEP-WCMC & IUCN	X	N/A	2020	1819 – 2020, annually	Y	Y	Y	Y	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		that are covered by protected areas, by ecosystem type												
		Proportion of KBAs in favourable condition	BirdLife International on behalf of the KBA Partnership	Y	2025			Y	Y	Y	N	N	N	
		Species Protection Index	Yale University Map of Life	X	N/A	2020	2001 to 2018, annually	Y	Y	N	N	N	Y	IPBES
		Proportion of important sites for terrestrial, freshwater and marine biodiversity that are conserved by PAs or OECMs	UNEP-WCMC, WCPA, WDKBA, EBSA database	Y	2025		Annually	N	y	N	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		% of PAs/OECMs by area meeting their ecological objectives	UNEP-WCMC and IUCN through PAME/WDP/NBSAPS	Y	2024	N/A						N	N	
		% of PAs/OECM by area, which have implemented management (comprehensive / partial / minimal / don't know	UNEP_WCMC and IUCN through PAME/ WDPA	Y	2024	N/A						N	N	
		Number of certified forest areas under sustainable management with verified impacts on	FSC	X	N/A	2020	2018, every 5 years	Y	Y	Y	N	N	N	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
			biodiversity conservation												
			Number of certified forest areas under sustainable management with High Conservation Values	FSC	Y	2022	N/A	N/A	Y	Y	Y	N	N	N	
	T2.3. Representative system of protected areas and other effective area-based conservation measures	Trends in ecological representativeness of areas conserved	Protected Area Representativeness Index.	CSIRO	X	N/A	2018	1970 to 2010: decadal 2010 onwards: biennial	Y	Y	N	N	N	Y	
			Species Protection Index	Yale University Map of Life	X	N/A	2020	2001 to 2018, annually	Y	Y	N	N	N	Y	IPBES
			Proportion of terrestrial, freshwater and marine	Terrestrial Ecoregions (Dinerstein et al.)	X	N/A	2019	2019, annually	Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		ecological regions which are conserved by PAs or OECMs.	Marine Ecoregions (Spalding et al.) Freshwater ecoregions (Abell et al.) Terrestrial ecosystems (Sayre et al.) National/Regional equivalents. WDPA WD-OECM + National /Regional equivalents.												
T2.4. Effective and equitable management of the system of protected areas	Trends in management effectiveness	Protected Areas Management Effectiveness	UNEP-WCMC	X	N/A	2020	2017, monthly	Y	Y			N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
and other effective area-based conservation measures		[Percentage/ area] of coral reefs included in effectively managed MPAs and OECMs	French Agency for Biodiversity	Y	2021			Y	Y	Y	N	N	N	
		% of PAs/OECMs by area with documented ecological objectives (PA Effectively protected)	UNEP_WCMC and IUCN through PAME/ WDPA	Y	2022							N	N	
	Trends in proportion of protected areas and other effective area-based conservation measures under various	Social Assessment of Governance and Equity (SAGE)	IIED	Y	2021	N/A					N	N	N	
		Number and area of PA/CAs in each of the four governance	UNEP-WCMC and ICCA Consortium - WDPA	Y	2019	N/A						N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	governance regimes	types with community governance subdivided into self-proclaimed ICCAs and other	and ICCA registry											
		Percentage (%) of PA/CA and OECMs actively implementing effective measures to recognise and respect the knowledge and rights of indigenous and local communities	WDPA - NBSAPS	Y	N/A	N/A						N	N	
		Proportion of assessed marine protected	Reef Life Survey	Y	2022		2014, ~5-10 years	Y	Y			N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		areas that are ecologically effective												
T2.5. Connectivity within the system of protected areas and other effective area-based conservation measures	Trend in connectivity of protected areas and other effective area-based conservation measures	Protected Area Connectedness Index (PARC-Connectedness).	CSIRO	X	N/A			Y	Y			N	Y	
		Protected Connected (Protconn).	European Commission	X	N/A			Y	Y			N	Y	
		Ecosystem Intactness Index	WCS	Y	2020	N/A	2010	Y	N	N	N	N	N	
T2.6. Increased protection and conservation effectiveness	Trend in conservation effectiveness of protected areas and other area-based	Proportion of KBAs in favourable condition	BirdLife International on behalf of the KBA Partnership	Y	2025			Y	Y	Y	N	N	N	
		Species Protection Effectiveness Index	Yale University Map of Life, NGS	Y	2021		2001 – 2020, annually		Y	N	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	conservation measures	Proportion of assessed marine protected areas that are ecologically effective	Reef Life Survey	Y	2022		2014, ~5-10 years	Y	Y			N	N	
T2.7. Integration into landscape and seascape context	Policy and governance practices outside of protected areas and OECMs compatible with their management objectives	Social Assessment of Governance and Equity (SAGE)	IIED	Y	2021	N/A					N	N	N	
T3.1. Active recovery and conservation management actions	Trend in ex-situ conservation measures	Number of plant genetic resources for food and agriculture secured in medium or long term conservation facilities	FAO	X	N/A	2019	2014-2019, annually	Y	Y	Y		Y SDG indicator 2.5.1.a	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Number of animal genetic resources for food and agriculture secured in medium or long term conservation facilities	FAO	X	N/A	2019	2000 - 2019	Y	Y	Y		Y SDG indicator 2.5.1.b	N	
	Trends in species recovery and reintroduction programmes	Proportion of species requiring intensive recovery actions to avoid extinction that are under active recovery management	IUCN	Y	N/A							N	N	
		Number of species with Green Status (IUCN Red List) assessments	IUCN	Y	2025		Annually	Y	Y	N	N	N	N	N

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		of 'Recovered'												
		Percentage of threatened species that are improving in status.	IUCN	X	2024		1993	Y	N	N	N	N	N	
		Number of certified forest areas under sustainable management with verified impacts on biodiversity conservation	FSC	X	N/A	2020	2018, every five years	Y	Y	Y	N	N	N	N
T3.2. Reduced human-wildlife conflicts	Trend in human-wildlife conflicts	To be determined												
T4.1. Harvest is legal, sustainable and safe for	Trends in proportion of biological	Red List Index	IUCN / BirdLife International	X	N/A			Y	Y	Y		Y	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
human health and biodiversity	resources harvested legally											SDG indicator 15.5.1		
		Living Planet Index (LPI) for utilised species	ZSL	Y	2020		1970 – 2020, annually	Y	Y	N	N	N	N	IPBES (pending)
	Trends in proportion of biological resources harvested within the established harvest limits	To be determined												
	Trends in proportion of biological resources harvested though sustainable harvest practices	To be determined												
	Trends in measures ensuring	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	safe harvesting operations													
T4.2. Trade is legal, sustainable and safe for human health and biodiversity	Trends in proportion of biological resources traded legally	Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing	FAO	X	N/A			Y				Y SDG indicator 14.6.1	Y	
	Trends in proportion of biological resources traded within the established limits/quotas	Red List Index (internationally traded species)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
	Trends in measures ensuring	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	safety of trade operations													
T4.3. Use is legal, sustainable and safe for human health and biodiversity	Trends in proportion of biological resources used legally	To be determined												
	Trends in proportion of biological resources used within the established limits/quotas	To be determined												
	Trends in measures ensuring safe use of biodiversity	Red List Index (trends driven by utilisation)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
		Red List Index (trends driven by fisheries)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
T5.1. Identification, control and	Trends in timely identification	Trends in the numbers of invasive	IUCN Species Survival Commission											

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
management of pathways for introduction of invasive alien species	of pathways for introduction	alien species introduction events.	Invasive Species Specialist Group											
	Trends in development of control and management measures for pathways for introduction	To be determined												
T5.2. Effective detection, identification, prioritisation and monitoring of invasive alien species	Trends and efficiency of detection of invasive alien species	Species Status Information Index, alien species	MOL, Yale University, GBIF, sTWIST	Y	2020		Annually							
	Trends in identification of invasive alien species	Trends in the status of knowledge of IAS	tbd - currently sTWIST Project in collaboration with ISSG	Y	2020/2021									
	Trends monitoring of invasive	Species Status Information	MOL, Yale University, GBIF, sTWIST	Y	2020		Annually					N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	alien species	Index, alien species												
T5.3. Establishment of measures for eradication, control and management of invasive alien species	Trends in the rate of invasive species eradication	Trends in invasive alien species vertebrate eradications.	IUCN ISSG	X	N/A	2016	1870-2016	Y	Y	Y		N	Y	
	Trends in establishing control measures	Legislation for prevention and control of invasive alien species (IAS), encompassing "Trends in policy responses, legislation and management plans to control and prevent spread of invasive alien species" and "Proportion of countries	IUCN ISSG	X	N/A	2018	1967 – 2016	Y	Y	Y		Y SDG indicator 15.8.1	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species												
	Trends in establishing management measures	To be determined												
T5.4. Eliminated or reduced impacts of IAS	Tends in the impact of invasive alien species	Red List Index (impacts of invasive alien species)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
		Trends in spread of species impacts	tbd - currently sTWIST Project in collaboration with ISSG	Y	2020/2021							N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T5.5. Eradication, control or management of IAS in priority sites	Trends in elimination of AIS and their impacts in islands	To be determined												
	Trends in elimination of AIS and their impacts in protected areas and areas with other effective area-based conservation measures	Proportion of Key Biodiversity Areas threatened by IAS	KBA Partnership	Y				Y	Y	Y	N	N	N	
	Trends in elimination of AIS and their impacts in intact / wilderness areas	To be determined												
T6.1. Reduction of pollution from excess nutrients	Trends in levels of pollution	Nitrogen balances	OECD	Y		2020	1990-2017, biannually	Y		Y	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	from nitrogen													
	Trends in levels of pollution from phosphorus	Phosphorus balances	OECD	Y		2020	1990-2017, biannually	Y		Y	N	N	N	
T6.2. Reduction of pollution from biocides	Trends in levels of pollution from excess pesticides	To be determined												
	Trends in levels of pollution from excess herbicides	To be determined												
	Trends in levels of pollution from excess other biocides	To be determined												
	Trends in levels of pollution	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T6.3. Reduction of pollution from plastic	with marine plastic													
	Trends in levels of pollution from plastic in terrestrial and freshwater ecosystems	To be determined												
T6.4. Reduction of pollution from other sources	Trends in levels of pollution from organic wastes	To be determined												
	Trends in levels of pollution from lead	To be determined												
	Trends in levels of pollution from noise	To be determined												
	Trends in levels of pollution	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	from artificial light													
	Trends in levels of pollution from sediments	Index of Coastal Eutrophication	UNEP / IOC-UNESCO	Y	2021		Every 5 years					Y SDG indicator 14.1.1a	N	
		Red List Index (impacts of pollution)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
T7.1. Increased biodiversity contribution to climate change mitigation, adaptation and disaster risk reduction	Trends in carbon stocks in different ecosystems	To be determined												
	Trends in contribution to climate change adaptation	To be determined												
	Trends in contribution to disaster risk reduction	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T7.2. Minimised negative impacts on biodiversity from any mitigation, adaptation and disaster risk reduction measures	Trends in integration of biodiversity consideration in design of mitigation, adaptation and disaster risk reduction projects	To be determined												
	Trends in environmental impacts assessments of mitigation, adaptation and disaster risk reduction projects	To be determined												
	Trends in Invertebrate stocks	To be determined												
Meeting people's needs through sustainable use and benefit-sharing														

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T8.1. Sustainable management of aquatic wild species of fauna and flora, including fisheries	Trends in fish stocks.	Proportion of fish stocks within biologically sustainable levels	FAO	X	N/A	2017	1974-2017	N	N	Y		Y SDG indicator 14.4.1	N	
		Large Reef Fish Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y	Y		N	Y	
	Trends in sustainable fisheries management	Proportion of fish stocks within biologically sustainable levels	FAO	X	N/A	2017	1974-2017	N	N	Y		Y SDG indicator 14.4.1	N	
		Red List Index (impacts of fisheries)	IUCN & BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
	Trends in population and extinction risk in bycatch species	Red List Index (albatrosses and large petrels)	BirdLIfe International and IUCN	X		2020	1988, updated every 4 years	Y	Y	N	N	N	N	
		Living Planet Index (LPI) (trends in	ZSL/WWF	X	2021		1970, annually	Y	Y	N	N	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		target and bycatch species)												
	Trends in aquatic plants	To be determined												
	Trends in Invertebrate stocks	To be determined												
T8.2. Sustainable management of terrestrial wild species of fauna and flora	Trends in terrestrial wild species of fauna used for food and medicine	Red List Index (species used for food and medicine)	IUCN and BirdLife International	X		2020	1993 – 2020, annually	Y	Y	N	Y	N	Y	
		Living Planet Index (LPI) for utilised species	ZSL	Y	2020		1970 – 2020, annually	Y	Y	N	N	N	N	IPBES (pending)
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in terrestrial wild species of flora used for food and medicine	Comprehensiveness of conservation of socioeconomically as well as culturally valuable species.	CIAT, Crop Trust	Y		2018	2018; every 3-5 years	Y	Y	Y		N	Y	
T9.1. Sustainable management of agricultural biodiversity, including soil biodiversity, cultivated plants and farmed and domesticated animals and of wild relatives	Trends in area of agriculture under sustainable practices	Changes in land productivity	UNCCD	X	N/A	2015	2000-2015, annually	Y	Y	Y	N	Y SDG sub-indicator 15.3.1	N	UNCCD
	Trends in soil quality	Changes in SOC stocks	UNCCD	X	N/A	2015	2000-2015, annually	Y	Y	Y	N	Y SDG sub-indicator 15.3.1	N	UNCCD
	Trends in pollinators	Red List Index (pollinating species)	IUCN and BirdLife International	X		2020	1993 – 2020, updated periodically	Y	Y	N	Y	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in extinction risk and populations of agro-ecosystem associated species	Wild Bird Index (farmland species)	RSPB & BirdLife International	X		2020	Annually	Y	Y	Y	Y	N	Y	
	Trends in genetic diversity of cultivated plants and of wild relatives	Comprehensiveness of conservation of socioeconomically as well as culturally valuable species.	CIAT, Crop Trust	Y		2018	2018; every 3-5 years	Y	Y	Y		N	Y	
Y		Number of plant genetic resources for food and agriculture secured in medium or long term conservation facilities	FAO	X		2019	2014, 2016-2019 annually	Y	Y	Y		Y SDG indicator 2.5.1.a	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in genetic diversity of domesticated animals and of wild relatives	Farmland Biodiversity Score (Trends in farmland biodiversity and sustainability of agricultural land)	ICRAF	Y	2021		Sub-annually	Y	Y				N (application pending)	
		Number of animal genetic resources for food and agriculture secured in medium or long term conservation facilities	FAO	X		2019	1980 - 2020	Y	Y	Y		Y SDG indicator 2.5.1a	Y	
		Proportion of local breeds classified as being at risk of extinction	FAO	X		2019	1980 - 2020	Y	Y	Y		Y SDG indicator 2.5.2	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T9.2. Sustainable management of aquaculture	Trends in production of aquaculture under sustainable practices	To be determined												
T9.3. Sustainable management of all types of forests	Trends in proportion of area of forests under sustainable practices	Progress towards sustainable forest management	FAO	X		2020	2000 - 2018	Y	Y	Y	Y	Y SDG indicator 15.2.1	Y	
T10.1. Regulation of air quality	Trends in extent and quality of natural ecosystems	To be determined												
T10.2. Regulation of hazards and extreme events	Trends in extent and quality of natural ecosystems	To be determined												
T10.3. Regulation of freshwater	Trends in extent and quality of	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
quantity, quality, location and timing	natural ecosystems													
T11.1. Access to green/blue spaces	Trends in access to green/blue spaces	To be determined												
T11.2. Contributions of biodiversity to human health and well-being	Trends in species that provide essential services	Red List Index (pollinating species)	IUCN and BirdLife International	X		2020	1993 – 2020, updated periodically	Y	Y	N	Y	N	Y	
		Species Habitat Index	MOL, Yale University, NGS	X	N/A	2020	2001-2018, annually	Y	Y	Y		N	N	IPBES
	Trends in contributions to human health and well-being from forest ecosystems	To be determined												
	Trends in contributions to human health and well-being from dry and	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	sub-humid lands													
	Trends in contributions to human health and well-being from grasslands	To be determined												
	Trends in contributions to human health and well-being from other terrestrial ecosystems	To be determined												
	Trends in contributions to human health and well-being from mangroves	Ocean Health Index	NCEAS	X	N/A	2019	2012-2019, annually	Y	Y	Y		N	Y	
	Trends in contributions to human	Ocean Health Index	NCEAS	X	N/A	2019		Y	Y	Y		N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	health and well-being from coral reefs						2012-2019, annually							
		Cover of key benthic groups	Global Coral Reef Monitoring Network	Y	2022		1980s/1990s	Y	Y	Y		N	N	
		Structural Complexity	WCS	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	
		Carbonate budgets	University of Exeter	Y	N/A	N/A	N/A	Y	Y	Y	N	N	N	
		Large Reef Fish Index	Reef Life Survey	Y	2022	2016 (Australia only)	2015, ~5-10yrs	Y	Y	Y		N	Y	
	Trends in contributions to human health and well-being from seagrass ecosystems	Ocean Health Index	NCEAS	X	N/A	2019	2012-2019, annually	Y	Y	Y		N	Y	
	Trends in contributions to human health and	Ocean Health Index	NCEAS	X	N/A	2019	2012-2019, annually	Y	Y	Y		N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	well-being from other marine and coastal ecosystems													
	Trends in contributions to human health and well-being from wetlands	To be determined												
T12.1. Access to genetic resources	Trends in access to genetic resources	To be determined												
T12.2. Benefit shared from the use of genetic resources	Trends in the benefits from the access to genetic resources shared	Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable	Secretariat of the CBD	Y	N/A	2018	2016-2018	Y	Y	Y		Y SDG indicator 15.6.1	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		sharing of benefits												
T12.3. Benefits resulting from use of traditional knowledge associated with genetic resources	Trends in use of traditional knowledge associated with genetic resources	To be determined												
	Trends in benefits generated and shared from the use of traditional knowledge associated with genetic resources	To be determined												
Tools and solutions for implementation and mainstreaming														

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
T13.1. Biodiversity reflected in planning at all levels	Trends in integration of biodiversity and ecosystem service values into planning processes	To be determined												
	Trends in integration of biodiversity and ecosystem service values into development processes	To be determined												
	Trends in integration of biodiversity and ecosystem service values into poverty	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	reduction strategies													
	Trends in integration of biodiversity and ecosystem service values into sectoral plans	To be determined												
T13.2. Biodiversity reflected in national and other accounts	Trends in integration of biodiversity and ecosystem service values into national accounts	To be determined												
	Trends in integration of biodiversity and ecosystem	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	service values into other accounts													
T13.3. Biodiversity values are reflected in policies and regulations, including on biodiversity inclusive environmental impact assessments and strategic environmental assessments	Trends in the number of policies and regulations which incorporate biodiversity consideratio ns	To be determined												
	Trends in the number of policies and regulations on environment al impact assessment which incorporate biodiversity consideratio ns	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in the number of policies and regulations requiring the use of strategic environmental impact assessment which incorporate biodiversity considerations	To be determined												
T14.1. Reduction of at least [50%] in negative impacts on biodiversity	Trends in ecological limits reached or surpassed	Ecological Footprint	Global Footprint Network	X	N/A	2016	1961-2016	Y	Y	Y		N	Y	
		Human Appropriation of Net Primary Production (HANPP)	Institute of Social Ecology (SEC), University of Natural Resources and Life Sciences, Vienna	X	N/A	2005	1960-2005	Y				N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Domestic material consumption, domestic material consumption per capita, and material consumption per GDP	UNEP (OECD, Eurostat)	X	N/A	2017	1970, 2017	Y	Y	Y		Y SDG indicator 12.2.2	N	
T14.2. Sustainable production practices, including circular economy and waste management	Trends in sustainable production in sectors	Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or target into national policies	UNEP	X	N/A	2018	2018, every 2 years	Y	Y	N		Y SDG indicator 12.1.1	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
Y		Number of MSC Chain of Custody Certification holders by distribution country	Marine Stewardship Council	X	N/A	2019	2000-2019	Y		Y		N	Y	
	Trends in the application of circular economy principles and practices	To be determined												
	Trends in waste management	To be determined												
T14.3. Sustainable supply chains at national and international levels	Trends in certification of supply chains	Area of forest under sustainable management: total FSC and PEFC forest management certification	Forest Stewardship Council (FSC) Programme for the Endorsement of Forest	X	N/A	PEFC: 2020	1995-2017; PEFC: 1999-2010: annually 2011-2020	Y	Y	Y	Y	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Certification (PEFC)					quarterly							
		MSC Certified Catch	Marine Stewardship Council	X	N/A	2019		Y		Y		N	Y	
	Trends in a proportion of supply chains which are legal and sustainable	To be determined												
T15.1. Sustainable consumption patterns	Trends in use of non-renewable natural resources	Material extraction and consumption (fossil energy, metals, non-metallic minerals)	UNEP (OECD, Eurostat)	X								N	N	
	Trends in use of renewable	Food loss index and food waste index	FAO	X	N/A	2019	2019, annually	N	N	Y		Y SDG indicator 12.3.1a	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	natural resources	Food waste index	UNEP	X	N/A	2020	2020, biennially	Y	Y	Y		Y SDG indicator 12.3.1b	N	
		Material extraction and consumption (biomass for food and feed, wood biomass)	UNEP (OECD, Eurostat)	X								N	N	
		Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	FAO	X	N/A	2017	2000 – 2017, annually	N	N	N		Y SDG indicator 6.4.2	N	
	Trends in use of biological resources	Living Planet Index (LPI) for utilised species	ZSL/WWF	Y	2020		1970, annually	Y	Y	N	N	N	N	IPBES (pending)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Material extraction and consumption (biomass for food and feed, wood biomass)	UNEP (OECD, Eurostat)	X										
	Trends in ecological limits reached or surpassed	Ecological Footprint	Global Footprint Network	X	N/A	2016	1961-2016	Y	Y	Y		N	Y	
		HANPP	Institute of Social Ecology (SEC), University of Natural Resources and Life Sciences	X	N/A	2005	1960 – 2005	Y	Y	Y		N	Y	
		Domestic material consumption	UNEP (OECD, Eurostat)	X	N/A	2017	1970 - 2017	Y	N	N		Y SDG indicator 12.2.2	N	
T15.2. New vision of good quality of life based on	Trends in public engagement	Biodiversity Barometer	UEBT	X	N/A	2018	2009 – 2018	Y	N	Y		N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
sustainability and new social norms for sustainability	and attitudes towards biodiversity	Biodiversity Engagement Indicator	Conservation International	X	N/A	2018	2017-2018	Y	Y			N	Y	
T15.3. Peoples' responsibility for their choices	Trends in demand for more environmentally friendly products	To be determined												
T16.1. Measures to prevent potential adverse impacts of biotechnology on biodiversity and human health	Trends in measures to prevent potential adverse impacts of biotechnology	To be determined												
T16.2. Measures to manage adverse impacts of biotechnology on biodiversity and human health	Trends in measures to manage adverse impacts of biotechnology	To be determined												
T16.3. Measures to control adverse impacts of biotechnology on	Trends in measures to control adverse	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
biodiversity and human health	impacts of biotechnology													
T17.1. Increase in positive public and private economic and regulatory incentives	Trends in development and application of public incentives that promote biodiversity conservation and sustainable use	Number of countries with biodiversity-relevant taxes (and # of instruments)	OECD	X	N/A	2020	1980-2020, annually	Y	Y	Y	N	Y SDG indicator 15.a.1	Y	
		Number of countries with biodiversity-relevant charges and fees (and # of instruments)	OECD	X	N/A	2020	1980-2020, annually	Y	Y	Y	N	Y SDG indicator 15.a.1	Y	
		Number of countries with biodiversity-relevant tradable permit schemes	OECD	X	N/A	2020	1980-2020, annually	Y	Y	Y	N	N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		(and # of instruments)												
		Number of countries (and number of instruments) with biodiversity offset programmes	OECD	Y	2020, covering 1980-2020	2020	1980-2020	Y	Y	Y		N	N	
		Number of countries (and number of instruments) with payments for ecosystem services (PES) programmes	OECD	Y	2020, covering 1980-2020	2020	1980-2020	Y	Y	Y		N	N	
	Trends in development and application of private incentives	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	that promote biodiversity conservation and sustainable use													
T17.2. Decrease in subsidies the most harmful to biodiversity	Trends in the number of subsidies, harmful to biodiversity	Trends in potentially environmentally harmful elements of government support to agriculture (producer support estimate)	OECD	X	N/A		1990-2019	Y				N	Y	
		Trends in potentially environmentally harmful government support to fisheries (fisheries support estimate)	OECD	Y	2021	N/A	2008-2020, annually	Y	Y	N	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		Trends in the number and value of government fossil fuel support measures	OECD, IEA	X	N/A	2020,	2010 – 2020, annually	Y	N	Y		N	N	
	Trends in the value of subsidies harmful to biodiversity	To be determined												
T18.1. Identification of funding needs to meet ambition of the goals and targets of the Framework	Trends in the number of countries which have assessed funding needs	To be determined												
T18.2. Increase in financial resources from international sources	Trends in the mobilization financial resources from public international financial flows	Official development assistance for biodiversity	OECD	X	N/A	2020	2002-2018, annually	Y	Y	Y		N	Y	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in the mobilization of financial resources from private sector	To be determined												
	Trends in the mobilization of financial resources from charitable organisations	Biodiversity-related philanthropic funding	OECD	Y		2018	2017-2018	N	N	Y		N	N	
T18.3. Increase in financial resources from domestic sources	Trends in public domestic resource mobilization	Government expenditure on biodiversity protection	OECD (Eurostat)	Y								N	N	
		Revenue from biodiversity-related economic instruments	OECD	X								N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	Trends in the mobilization of financial resources from private sector	Business expenditure on biodiversity protection	OECD (Eurostat)	Y								N	N	
	Trends in the mobilization of financial resources from charitable organisations	Biodiversity-related philanthropic funding	OECD	Y		2018	2017-2018	N	N	Y		N	N	
T18.4. Implementation of the strategy for capacity -building	Trends in support to capacity building	To be determined												
	Trends in capacity building activities	To be determined												
T18.5. Implementation of the strategy for	Trends in technology transfer	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
technology transfer and scientific cooperation	Trends in scientific cooperation	To be determined												
T19.1. Availability of reliable and up-to-date biodiversity related information	Trends in the available of biodiversity related information	Growth in Species Occurrence Records Accessible Through GBIF	GBIF	X	N/A	2017	2008 - 2017	Y	Y	N		N	Y	
		Species Status Information Index	MOL, Yale University, GBIF	X	N/A	2020	1950 - 2019, annually	Y	Y	Y	N	N	IPBES	
		Growth in number of records and species in the Living Planet Index database (LPD)	ZSL/WWF	X		2020	2012, annually	Y	Y	N	N	N	N	
T19.2. Promotion of awareness of values of biodiversity	Trends in awareness of	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	biodiversity values													
T19.3. Promotion of biodiversity in education	Trends in the integration of biodiversity into academic curricula	To be determined												
T19.4. Availability of research and knowledge, including traditional knowledge, innovations and practices of indigenous peoples and local communities with their free, prior and informed consent	Trends in the development of biodiversity related knowledge	The number of countries in which comprehensive national KBA Assessments have been updated using the KBA Global Standard	KBA Partnership	Y	2022		Annually		Y	Y	N	N	N	
		The percentage of taxonomic classes and ecosystem types for	KBA Partnership	Y	2022		Annually	Y	Y	Y	N	N	N	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
		which comprehensive national KBA assessments have been made												
		Number of assessments on the IUCN Red List of threatened species	IUCN	X		2019	Annually	Y	Y	N	N	N	Y	
		Taxonomic and functional coverage of species in SPI and SHI	MOL, Yale University	Y	2021		Annually	Y	Y	Y	N	N	N	
	Trends in access to biodiversity related knowledge	To be determined												
	Trends in documentation and use of traditional	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Components of the Target	Monitoring Elements	Indicators	Responsible Institution	Available today (X) or under active development (Y)	Date of availability for indicator in development (Year)	Year of last update (e.g. 2019)	Time series and frequency of updates (e.g. 1985-2019, annually)	Methodology available for national use (Y/N)	Global indicator can be disaggregated for national use (Y/N)	National data aggregated to form global indicator (Y/N)	Used in GBO4 (Y/N)	SDG indicator (Y/N)	BIP Indicator (Y/N)	Indicator used to measure other MEAs or processes (e.g. Ramsar, IPBES, CMS)
	knowledge, innovations and practices with their free, prior and informed consent													
T20.1. Equitable participation of IPLCs in decision-making related to biodiversity and rights over relevant resources	Trends in the participation of indigenous peoples and local communities in decision making	To be determined												
	Trends in the recognition of rights over relevant resources	To be determined												
T20.2. Equitable participation of women and girls in	Trends in the participation	To be determined												

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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decision-making related to biodiversity and rights over relevant resources	of women and girls in decision making													
	Trends in the recognition of rights over relevant resources	To be determined												
T20.3. Equitable participation of youth in decision-making related to biodiversity and rights over relevant resources	Trends in the participation of youth in decision making	To be determined												
	Trends in the recognition of rights over relevant resources	To be determined												